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FLIGHT RECORDS FOR TWENTY-EIGHT SPECIES OF *MACROPHYA* DAHLBOM (HYMENOPTERA: TENTHREDINIDAE) IN VIRGINIA, AND AN UNUSUAL SPECIMEN OF *M. EPINOTA* (SAY)

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Abstract.—Twenty-eight species of the sawfly genus *Macrophya* Dahlbom were collected in a 500 acre site in Virginia over a five year period. Peak annual flight periods ranged from the end of April to the first of July, but most occurred in June. A morphologically unusual female of *M. epinota* (Say) is noted that has an unusual, deep pit below the medial angle of the mesepisternum.

Key Words: *Macrophya,* sawflies, flight records

Sawflies of the genus *Macrophya* Dahlbom are a common sight in the spring in the eastern temperate regions of North America. Individuals are relatively large, 6 to 12 mm long, and most are black with whitish markings, though some have combinations of yellow, orange, and red. They can be seen in shrubby areas in open forests and along forest edges. During five years of field work at a locality in the Virginia Piedmont, I collected 3265 specimens of 28 species which represent 60% of the North American fauna. All species were treated by Gibson (1980) who recognized 46 species in North America, 44 east of the Rockies. Of the 23 species he recorded from Virginia, all except *M. masneri* Gibson were collected from this single site. Six of the species collected are new Virginia records (Table 1).

All species of *Macrophya* are known to fly in the spring, but little information is available on annual peak flight periods and comparison of flight times for so many species from a single locality. The data presented here may pertain to other geographical areas also, though the times may vary depending on the latitude and altitude.

The collection site was within a 500 acre area in Louisa Co., Virginia, about four miles south of Cuckoo. Townes-style Malaise traps (Townes 1962) were in continuous operation from mid-March to mid-October from 1985 through 1989. Traps were serviced every one to three weeks, depending on the weather. Up to 12 traps were used in a single season. Most were placed in areas with a rich diversity of vegetation, such as open woods or woods-edge habitats. Species of *Sambucus* and *Viburnum,* known hosts for some *Macrophya,* were common in several trap areas.

The species collected, species new for Virginia, numbers of specimens taken over the five year period, recorded host genera (from Gibson 1980), and flight times are given in Table 1. Most all species could be found from the end of May to the end of June, and many had peak flight periods during that time. *Macrophya pannosa* had the earliest peak flight period, during the end of April, and *M. bifasciata, M. cassandra, M. flavolineata,* and *M. mixta* followed in May. *Macrophya albomaculata* had the latest flight period, from the end of June through

Table 1. Flight records of 28 species of *Macrophya* in Louisa Co., Virginia. An "X" indicates early or late collection records of one or several individuals during one or more years. An asterisk (*) indicates a new state record for Virginia.

SPECIES (known host)	NUMBER OF SPECIMENS	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
M. alba MacGillivray	31						
M. albomaculata (Norton) (*Sambucus*)	474						
M. bifasciata (Say)*	8						
M. cassandra Kirby (*Carya*)	25						
M. cinctula (Norton)	26						
M. epinota (Say) (*Sambucus*)	3						
M. externa (Say)	5						
M. flavicoxae (Norton)	326						
M. flavolineata (Norton)*	49						
M. flicta MacGillivray (*Prunus*)	114						
M. formosa (Klug)	1,085						
M. fuliginea Norton (*Castanea*)	28						
M. goniphora (Say)	276						
M. lineatana Rohwer	28						
M. macgillivrayi Gibson	10						
M. maculilabris Konow (*Sambucus*)	28						
M. masoni Gibson*	1						
M. mensa Gibson	204						
M. mixta MacGillivray*	7						
M. nigra (Norton)	1						
M. nigristigma Rohwer (*Carya* ?)	5						
M. pannosa (Say) (*Sambucus*)	96						
M. pulchella (Klug)	84						
M. senacca Gibson*	3						
M. tibiator Norton	19						
M. trisyllaba (Norton) (*Sambucus*)	165						
M. varia (Norton)	162						
M. zoe Kirby*	2						

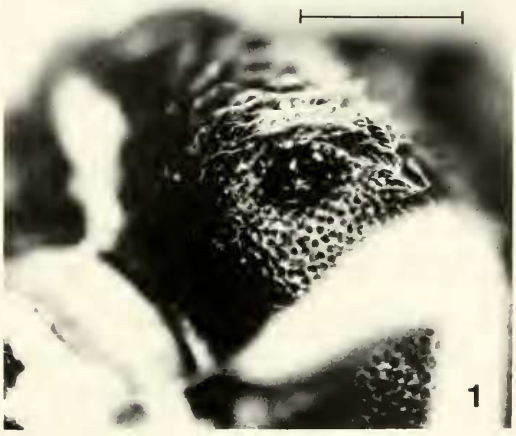

Fig. 1. Ventrolateral view of thorax of *M. epinota* showing deep pit below medial angle of mesepisternum. Anterior is to the left; white in front is a foreleg. Scale line = 1.0 mm.

mid-July and was collected over a longer period of time than any other species. Most species had one peak flight period, probably indicating a single generation a year. Records for one species, *M. mensa,* indicated two flight peaks. This could be due to lack of adequate data, two close generations, or presence of two closely related species. All specimens from both flight peaks appeared the same.

The most common species throughout the study area was *M. formosa.* Its host is not known but must be a plant common to each trap location. Nine other species (over 80 collected) were common: *M. albomaculata, M. flavicoxae, M. flicta, M. goniphora, M. mensa, M. pannosa, M. pulchella, M. trisyllaba,* and *M. varia.* The larval host of *M. goniphora* is not known, but adults were collected flying around *Rubus* sp. which was a common plant in the area.

Two examples illustrate the significance and potential use of seasonal data in systematic work. First, these data support Gibson's (1980) separation of *M. maculilabris, M. albomaculata,* and *M. pannosa.* They are difficult to separate morphologically, but each has a distinct, separate flight period. Gibson (1980) initially thought that the former two may belong to one morphologically variable species. Second, the separate but close flight peaks of *M. mensa* indicate the need to question the status of that species. A second species is possibly masquerading under that name.

Macrophya epinota (Say)

An unusual female was collected in southwestern Virginia (Grayson Co., base of White Top Mt., VI-17-88, on *Sambucus,* D. R. Miller). In color, lancet characters, and other respects, it is identical to *M. epinota,* but differs by having an extremely deep pit just below the sharp medial angle of the mesepisternum (Fig. 1). *Macrophya epinota* has a sharp medial angle on the mesepisternum but the area below the angle is flat or slightly concave. I have never seen specimens of any *Macrophya* species with such a deep pit. This specimen could either represent a distinct species or could be an anomaly. However, because of its similarity with *M. epinota* and because only a single specimen is available, I presently regard it as *M. epinota.* It is about 12 mm long, comparable in size to some of the larger specimens of *M. epinota.* I cite this oddity in case it is discovered again so its status can be better determined.

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